In all my years in the fire service, I have never seen anything approach the ferocity and magnitude of the Fort McMurray fire – a fire that devastated an area larger than Prince Edward Island; drove tens of thousands of residents from their homes; and continues to cause damage after more than a month. It’s almost beyond belief. The fact that almost 85 percent of Fort McMurray is still standing is even more unbelievable, and a true testament to the dedication and determination of the fire crews. Because this has been an uphill battle the whole way. >>>
When we analyze large-scale land fires, we look at three influencing factors:

1. Fuel
2. Weather
3. Topography

Unfortunately, Fort McMurray had all three factors going against it. The fire started within kilometers of the city – a city set in the middle of a boreal forest. All of those coniferous trees make for a beautiful backdrop, but when they burn they’re extremely volatile, especially black spruce, which cover much of the area. As David Moseley wrote back in 2015 for Fire Fighting in Canada magazine, “Black spruce more often has continuous branching from ground to crown, providing its own ladder fuel to spread a surface fire to a crown fire.” Crown fires travel fast, spreading from branch to branch through the tree tops. And as they burn, embers and burning debris are blown into the air, starting new fires away from the main blaze in a process called spotting. Black spruce are prone to producing firebrands that in turn result in spot fires.

Topography plays an important role in any wildfire, but in this case, the fuel and the weather alone were enough. Going all the way back to this past winter, we had mild temperatures with minimal snowfall. So right off the bat you have very little moisture content in the fuel. That, combined with a hot, dry May and strong winds provided ideal conditions for a fire to grow and spread rapidly.

Suppression tactics are dependent on the same factors that influence the fire in the first place: fuel, weather and topography. But generally, they can be put into two groups, direct and indirect suppression tactics. With a fire like this, it’s dangerous for ground crews to fight the fire directly. Instead you have to rely on water bombers and helicopter attacks while ground crews focus on containing the blaze.

A fire needs three things: Oxygen, heat and fuel. In an indirect attack, you’re trying to remove the fuel source from the fire. One way to do that is by constructing a firebreak or fire line. Either with heavy machinery or, more often than not, hand tools, you carve a line through the forest and build barriers in order to interrupt the fuel supply. It’s back breaking work, but with enough lead time you can slow or even stop the fire. There are also aerial bombers that lay down fire retardant, which acts in the manner – creating a break in the fuel supply.
Of course the effectiveness of any one tactic depends on the nature of the fire and its intensity. Near Fort St. John, by laying down retardant lines they were able to box in the fire, allowing ground crews to come in and finish the job. But in Fort McMurray, because of the high winds and the nature of the fuel, even the Athabasca river wasn’t able to contain the blaze.

While the wildland fighters are suppressing or diverting the fire, the structural firefighters are in town trying to protect the communities and key infrastructure. And this is where tough decisions sometimes need to be made.

In a typical fire, you’re trying to save a person’s home and belongings, no matter what. In situations where there’s enough time, you can go through neighbourhoods, cut down trees, rake leaves, remove firewood from the sides of houses, take seat cushions off patio furniture. Get rid of anything where embers can incubate. But when a whole community is burning you have to think critically. Depending on the environment, the fire’s activity and its rank, a decision may be made not to save a house – or an entire neighbourhood – because you don’t have the time or resources. Sometimes houses are sacrificed. Bulldozed to remove fuel from the fire and prevent it from spreading. The few for the many. That change in mind-set is one of the hardest things a firefighter has to do. And mentally, it takes its toll.

If your house burns down, as tragic as it is, you have neighbours you can turn to for support, you can stay in a hotel, and you can still go to work. When a whole community is devastated, you don’t have that support system. You’ve not only lost your home and your possessions, you’ve also lost your job and the securities that come with it.

It has been trying times for everyone: from the people who have been forced from their homes, to the firefighters who are away from theirs, and countless others in-between. But the way Alberta has come together to take in evacuees, dispatch fire crews, and lend aid and support, has been incredible and truly heartwarming. It’s times like these when you find out what a community is really made of. And the way everyone has come together to support each other really makes me proud to be an Albertan. We’re not out of the woods yet. Tough times are still ahead. But I know Fort McMurray will rise from the ashes, stronger than ever.

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Dennis specializes in fire and explosion investigations and has over 20 years’ experience in fire service. His professional experience includes seven years with the Manitoba Office of the Fire Commissioner and 13 years with Steinbach Fire and Rescue.